CLAIMS

What is claimed is:

1. A semiconductor device comprising:

a carrier substrate having a plurality of lands that have different thicknesses from each other; and

a semiconductor chip mounted to the carrier substrate.

2. The semiconductor device according to claim 1, wherein the thickness of each of the lands gradually varies from the inner region to the outer region of the carrier substrate.

3. A semiconductor device comprising:

a first semiconductor package having a plurality of first lands that have different thicknesses from each other; and

second semiconductor packages, each having a plurality of second lands that have different thicknesses from each other, the second lands being arranged opposite the first lands.

4. The semiconductor device according to claim 3, wherein the thickness of each of the first lands and the second lands gradually increases as a space between the first semiconductor package and the second semiconductor packages increases.

5. The semiconductor device according to claim 3, further including bumps bonded to the lands.

6. The semiconductor device according to claim 5, wherein the bumps have substantially the same volume.

7. The semiconductor device according to claim 3, further including:

insulating films formed on the lands; and

openings that are formed in the insulating films and have different opening areas corresponding to the thicknesses of the lands.

8. The semiconductor device according to claim 7, wherein the opening areas of the openings decrease as the thicknesses of the lands increase.

9. The semiconductor device according to claim 3, wherein:

the first semiconductor package includes:

a first carrier substrate having the first lands; and

a first semiconductor chip that are flip-chip mounted to the first carrier substrate, and

the second semiconductor packages includes:

second carrier substrates having the second lands;

second semiconductor chips mounted to the second carrier substrates;

bumps for bonding the first lands and the second lands to hold an end of each of the second carrier substrates directly above the first semiconductor chip; and

seals for sealing the second semiconductor chips.

10. The semiconductor device according to claim 9, wherein the first semiconductor package further comprises a ball grid array package in which the first semiconductor chip is flip-chip mounted to the first carrier substrate, and each of the second semiconductor packages further comprises at least one of a ball grid array package and a chip-size package in which each of the second semiconductor chips mounted to each of the second carrier substrates is sealed by molding.

11. An electronic device comprising:

a first carrier substrate having a plurality of first lands that have different thicknesses from each other;

a first electronic component that is flip-chip mounted to the first carrier substrate;

second carrier substrates, each having a plurality of second lands that have different thicknesses from each other, the second lands being arranged opposite the first lands;

second electronic components mounted to the second carrier substrates; and

seals for sealing the second electronic components.

12. An electronic apparatus comprising:

a first semiconductor package having a plurality of first lands that have different thicknesses from each other;

second semiconductor packages, each having a plurality of second lands that have different thicknesses from each other, the second lands being arranged opposite the first lands; and

a motherboard having the second semiconductor packages.

13. A method for manufacturing a carrier substrate comprising the steps of:

forming a plurality of lands on a first carrier substrate;

forming an insulating film on the plurality of lands formed on the first carrier substrate;

forming openings in the insulating film, wherein the openings have different opening areas and expose the surfaces of the lands; and

varying the thicknesses of the lands by etching the surfaces of the lands through the openings.

14. A method for manufacturing a semiconductor device comprising the steps of:

forming a plurality of first lands that have different thicknesses from each other on a first carrier substrate;

mounting a first semiconductor chip to the first carrier substrate;

forming a plurality of second lands that have different thicknesses from each other on second carrier substrates;

mounting second semiconductor chips to the second carrier substrates;

forming bumps on the second lands; and

arranging the second carrier substrates relative to the first carrier substrate by bonding the bumps formed on the second lands to the first lands.

15. A method for manufacturing a semiconductor device comprising the steps of:

forming a plurality of first lands on a first carrier substrate;

forming a first insulating film on the plurality of first lands formed on the first carrier substrate;

forming first openings in the first insulating film, wherein the first openings have different opening areas and expose the surfaces of the first lands;

varying the thicknesses of the first lands by etching the surfaces of the first lands through the first openings;

mounting a first semiconductor chip to the first carrier substrate;

forming a plurality of second lands on second carrier substrates;

forming second insulating films on the plurality of second lands formed on the second carrier substrates;

forming second openings in each of the second insulating films, wherein the second openings have different opening areas and expose the surfaces of the second lands;

varying the thicknesses of the second lands by etching the surfaces of the second lands through the second openings;

mounting second semiconductor chips to the second carrier substrates;

forming bumps on the second lands; and

arranging the second carrier substrates relative to the first carrier substrate by bonding the bumps formed on the second lands to the first lands.

16. A method for manufacturing an electronic device comprising the steps of:

forming a plurality of first lands that have different thicknesses from each other on a first carrier substrate;

mounting a first electronic component on the first carrier substrate;

forming a plurality of second lands that have different thicknesses from each other on second carrier substrates;

mounting second electronic components on the second carrier substrates;

forming bumps on the second lands; and

arranging the second carrier substrates relative to the first carrier substrate by bonding the bumps formed on the second lands to the first lands.